

THE LIFE HISTORY OF
TRAPEZITES WATERHOUSEI MAYO & ATKINS
(LEPIDOPTERA: HESPERIIDAE: TRAPEZITINAE)

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Abstract

The life history of *Trapezites waterhousei* Mayo & Atkins is described and illustrated. *Xerolirion divaricata* A.S. George (Dasypogonaceae) is the foodplant.

Introduction

Trapezites waterhousei Mayo & Atkins is distributed in south-western Western Australia from Payne's Find to Southern Cross and Koolyanobbing. The species has a highly disjunct distribution, being restricted to rocky outcrops where the foodplant occurs (Williams *et al.* 1996). There is a single annual generation and adults have been taken in September and October (Mayo and Atkins 1992, Williams *et al.* 1996). The foodplant was recorded by Williams *et al.* (1996), but the early stages have not previously been recorded.

Life History

Foodplant. *Xerolirion divaricata* A.S. George, family Dasypogonaceae (George 1986).

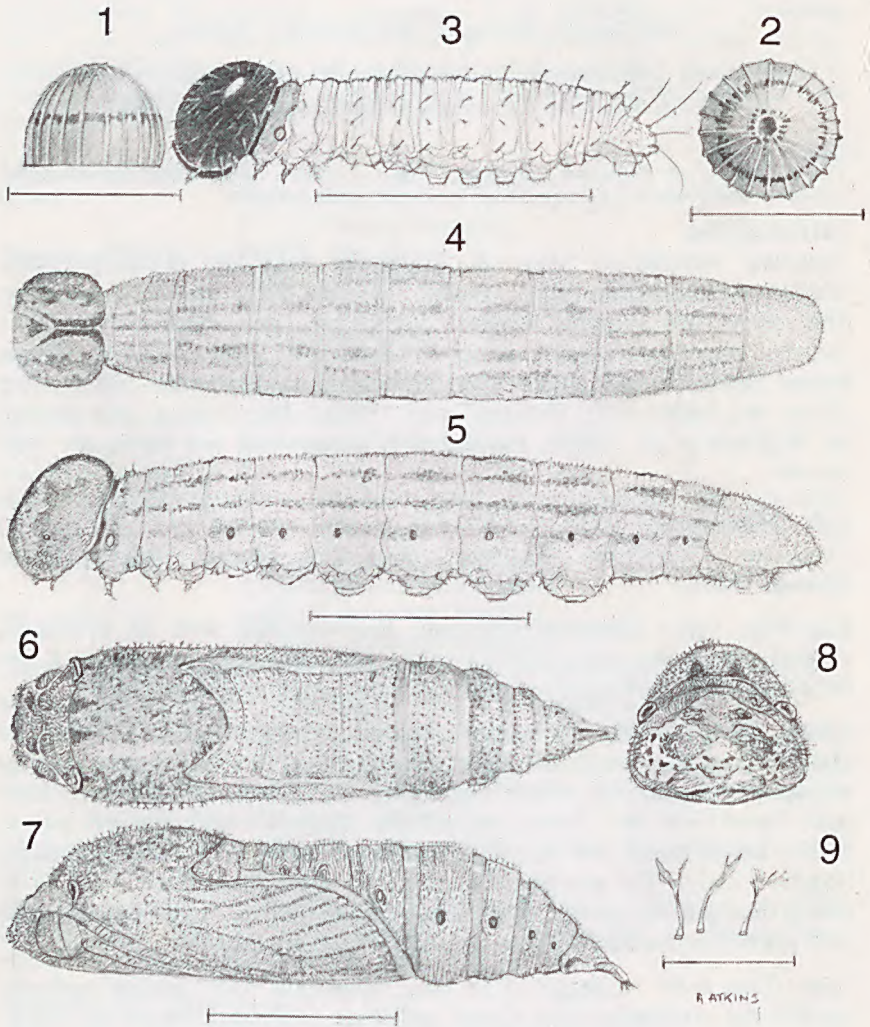
Egg (Figs 1-2). Diameter 0.70 mm, hemispherical, with 21 prominent vertical ribs; cream colored and unmarked when first laid, but within a few days developing a series of red markings laterally and on the micropyle.

Larva. 1st instar (Fig. 3) length 1.75 mm, head shiny black, prothoracic plate black. Body translucent, light brown, with a few long posterior setae, no prominent markings. Final instar (Figs 4-5) length 18-22 mm. Head light brown, with dark brown central line. Body pale light greyish brown, with a darker dorsal line and a pair of dorso-lateral lines extending along length of body. The area between the paired dorso-lateral lines is lighter in colour than the rest of the body. Head capsule rugose, light brown, frons with paired longitudinal dark brown bands diverging ventrally.

Pupa (Figs 6-9). Length 15-18 mm, cylindrical and tapering markedly towards the cremaster; head, thorax and wing cases dark brown to black, abdomen dark brown, banded with light brown; dorsal and lateral surfaces bearing numerous white setae.

Observations and Discussion

The early stages of *T. waterhousei* were located at a number of sites around Southern Cross in October 1993 and October 1994. Eggs were obtained from captive females using the technique described by Houston (1994).



Figs 1-9. Life history of *Trapezites waterhousei* Mayo & Atkins. (1-2) egg, lateral and dorsal views (scale line = 1.0 mm); (3) 1st instar larva, lateral view (scale line = 1.0 mm); (4-5) mature larva, dorsal and lateral views (scale line = 5.0 mm); (6-8) pupa, dorsal, lateral and frontal views (scale line = 5.0 mm); (9) pupal setae (scale line = 0.5 mm).

Larval shelters were located amongst the foliage of the foodplant, usually in a rolled dead leaf or piece of bark suspended in the foodplant. Other shelters were found that were constructed from leaves and stems of the foodplant. These types of shelters are typical of all Western Australian species of *Trapezites* Hübner. Whether these shelters may be constructed at a site distant from the foodplant, as was recorded by Williams *et al.* (1992) for *T. sciron* Waterhouse & Lyell, has not been determined. Pupation occurs within the shelters and most likely occurs in August and September. We have located mature larvae in October but these were not reared to adults and may have been parasitized.

In other Western Australian species of *Trapezites*, young, vigourously growing foodplants are apparently preferred for oviposition (Williams *et al.* 1992). We were unable to determine if such a preference exists in *T. waterhousei*, as at all of the sites where we observed this species the foodplants were undisturbed.

The early stages of *T. waterhousei* are typical for this genus and similar to those of *T. s. sciron* (Williams *et al.* 1992) and to Fisher's (1984) description of *T. s. eremicola* Burns. Together with the records of *T. s. sciron* feeding on *Acanthocarpus canaliculatus* and of *T. argenteoomatus* (Hewitson) feeding on *A. preissii* (Common and Waterhouse 1981) and other species of *Acanthocarpus* (pers. obs.), the Western Australian representatives of *Trapezites* represent the only members of the genus known to feed on any genus of plants other than *Lomandra*.

Xerolirion divaricata is an almost leafless small shrub restricted to laterite breakaways and rocky outcrops in the semi-arid zone of south-western Western Australia. It is closely allied to both *Lomandra* and *Acanthocarpus* (George 1986).

A further Western Australian species of *Trapezites* from Windy Harbour, south of Pemberton, again not feeding on *Lomandra*, is yet to be described (see Mayo and Atkins 1992). The phylogeny of this and other Western Australian species of *Trapezites*, particularly in relation to the biogeography of their associated foodplants, would no doubt reward further study. In particular, it would be of interest to determine if all of the Western Australian species are parapatric.

Voucher specimens relevant to this study are lodged in the insect collection, Department of Conservation and Land Management, Western Australia.

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